

9. The method as set forth in Claim 1 and further comprising after the etching of the second conductive layer:

laterally etching the top electrode and the plurality of layers of material until the top electrode and the plurality of layers of material have recessed a predetermined distance from an edge of the discrete sense layer.

10. The method as set forth in Claim 1 and further comprising after the etching of the second conductive layer:

selectively etching the discrete sense layer so that an exposed surface of the discrete sense layer is laterally etched and a length of the discrete sense layer is reduced along the first direction.

Dle **11.** The method as set forth in Claim 11, wherein the selective etching comprises a wet etch process.

12. The method as set forth in Claim 1 and further comprising:

depositing a dielectric material to fill in a space between the top electrodes and the plurality of layers of material.

13. The method as set forth in Claim 1 and further comprising after the removing the stop layer:

cleaning the surface of the sense layer.

14. A MRAM device fabricated according to the method as set forth in Claim 1.